

Statement for the Record

Before the U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittee on Investigations and Oversight

Written testimony for the Subcommittee on Oversight hearing titled
“EPA’s Bristol Bay Watershed Assessment – A Factual Review of a
Hypothetical Scenario”

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I. INTRODUCTION

Thank you for the opportunity to provide written testimony to the subcommittee on the important topic of Bristol Bay and EPA's Bristol Bay Watershed Assessment (BBWA). As a former Regional Administrator for USEPA Region 9 (2001-2009), I have extensive experience working on hard-rock mining issues, especially regarding permitting, enforcement and clean-up per the Clean Water Act (CWA), Clean Air Act (CAA), Comprehensive Environmental Recovery, Compensation, Liability Act (CERCLA), and the National Environmental Policy Act (NEPA).¹ I present this testimony on my own behalf, and it is based on my experience and review of the BBWA and documents supporting and commenting upon it, including from both supporters and opponents of the proposed Pebble mine. I would also like to note that I currently consult with the Bristol Bay Native Corporation, and formerly consulted with Trout Unlimited, on matters related to understanding how CWA §404 (c) issues are addressed by the US Government and how CWA §404(c) might apply with regard to Bristol Bay.

Copper mining in the Bristol Bay region is driven by, but not limited to, three key factors:

1. Location of the deposit
2. Size of the deposit
3. Grade of the ore

These parameters are well known and documented in a variety of submittals to state and federal agencies (e.g., Wardrop Report submitted by Northern Dynasty to the Securities and Exchange Commission). In light of what was known at the time, six federally recognized tribes, the Bristol Bay Native Corporation, the commercial and sport fishing industries of Bristol Bay and numerous conservation groups, requested EPA initiate a CWA §404(c) action. EPA subsequently initiated the watershed assessment by conducting an ecological risk assessment to better understand the environment and resources and the potential impact to the environment posed by large-scale hard rock mining in the Bristol Bay watershed.

EPA's revised draft BBWA describes the resources and a range of potential impacts based on available information in the public record, including detailed mining plans and scenarios put forward by the companies behind the proposed Pebble mine. The draft BBWA also addresses issues raised during the first public comment period by both the general public and those of the peer review panel. The potential adverse impacts are appropriately qualified relative to their likelihood and effect.

Although a draft, the BBWA makes it clear that the location and type of ore associated with the Pebble deposit and the massive size necessary to economically mine it inevitably means that mining the deposit will result in severe and unacceptable adverse impacts to the salmon fishery, and in consequence, to the Eskimo, Indian, and Aleut peoples who live in the area and rely on a subsistence lifestyle. The draft BBWA demonstrated the tremendous value of the commercial, sport and subsistence fisheries in Bristol Bay. Combined with the value of hunting and tourism in the region, the report estimated the economic activity attributable to the watershed to be

¹ See Wayne H. Nastri, Curriculum Vitae, attached as Enclosure 1.

valued at \$480 million in 2009, a conservative estimate based on subsequent studies taking account for the full downstream value of the fishery. The BBWA also showed that Bristol Bay sustained 14,000 jobs during that time. Clearly, Bristol Bay is home to a highly valuable American fishery.

My testimony first reviews in detail EPA's Bristol Bay Watershed Assessment, demonstrating that its scientific conclusions are sound and, if anything, conservative. I also review EPA's peer review process, as well as its government and public participation processes, concluding that, to date, EPA has structured and followed an impressive path that will further bolster the strength and credibility of its final findings. Finally, I address EPA's legal authority to conduct the assessment, as well as to follow it up with appropriate EPA action to protect Bristol Bay.

My testimony will also refute some of the arguments against a 404(c) action. Consider the following:

- The EPA's BBWA is based on reasonable mining scenarios contained in plans publicly submitted in an official capacity. While final plan details may change slightly, what won't change are the size, scope, and location of the mine in a highly sensitive aquatic habitat and ecosystem that maintains a vibrant commercial fishery.
- The EPA has an obligation to use its 404(c) authority whenever it deems our nation's waters would suffer an "unacceptable adverse effect;" even the conservative draft BBWA makes it clear that Bristol Bay will be adversely impacted by large scale hard rock mining. By conducting the BBWA, the EPA has done its due diligence in Bristol Bay. Waiting to initiate the NEPA process will only further delay the inevitable and create even more economic uncertainty for those who initially petitioned the EPA.
- As authorized by Section 404(c), EPA action can take many forms, from an outright prohibition on permits to the placement of restrictions on future permits to ensure that Bristol Bay is protected. In my view, a reasonable path forward would be for EPA to use proactive restrictions in the form of performance standards to protect Bristol Bay from the proposed Pebble mine.
- Issuing a 404(c) ruling in the near future will provide the Alaska Natives, commercial and sports fishing industries, and others who rely on Bristol Bay the certainty they all deserve. Further, it will provide companies with very clear parameters under which they could operate. The EPA has made clear that a 404(c) action is *preferable* before the Corps or state issues a permit. During my time as an EPA regional administrator, developers expressed similar up-front preferences as a way to avoid needlessly wasting precious capital and resources.

Further, in my years as EPA's Region 9 Administrator, the largest Superfund sites that we dealt with included numerous mining operations. Every one of these mines paled in comparison to what the proposed Pebble mine would look like, and none were in such an ecologically sensitive area that supported vibrant subsistence, commercial and sport fisheries. The fact is that the general size, extremely sensitive location and potentially acid generating type of ore associated with the proposed Pebble mine are all known today. EPA's Bristol Bay Watershed Assessment makes clear that this mine would have unacceptable adverse impacts on the legendary Bristol Bay wild salmon fishery.

The Riley/Yocom Report (2011), “Mining the Pebble Deposit: Issues of 404 Compliance and Unacceptable Environmental Impacts”, describes a set of actions that EPA could initiate proactively under CWA § 404(c) authority. These restrictions include: 1) a prohibition on discharge of dredged or fill material into salmon habitat; 2) a prohibition on the discharge of dredged or fill material that does not meet testing requirements demonstrating that such material is not toxic to aquatic life; and 3) a prohibition on the discharge of dredged or fill material runoff or seepage from which would require treatment in perpetuity.² As Riley/Yocom demonstrate, these restrictions are rooted in well-established precedents and long-standing practices and policies within the CWA 404 program, and thus routinely are applied to 404 permits in the Pacific Northwest and elsewhere. Asserting these restrictions proactively furthers the goals of the Clean Water Act by providing certainty, and associated time and money savings, to industry and the public, including the indigenous peoples of the region to whom the United States has a trust responsibility, as to what will be required of any proposed plan to mine that deposit.

EPA, in its role as a risk manager along with its responsibilities under the Clean Water Act, now has the information and duty to fulfill the Congressional mandate to protect our nation’s waters. EPA should finalize the BBWA as soon as possible, and should move forward with CWA § 404 action to protect Bristol Bay.

II. THE BRISTOL BAY WATERSHED ASSESSMENT RELIES ON SOUND SCIENCE, DATA, AND METHODOLOGIES

A. PROPER USE OF AN ECOLOGICAL RISK ASSESSMENT

An Ecological Risk Assessment evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors. It is a flexible process for organizing and analyzing data, information, assumptions and uncertainties to evaluate the likelihood of adverse ecological effects. Ecological risk assessments provide a critical element for environmental decision-making by giving risk managers an approach for considering available scientific information along with the other factors they need to consider (e.g., social, legal, political, or economic) in selecting a course of action. It is common that assumptions and specific analytical methods are challenged via the public review process and re-visited, re-analyzed in a subsequent draft. Inevitably there will be discussions among experts, and that discourse strengthens the final product.

B. PROPER USE OF MINING SCENARIOS AND DATA

An extensive amount of previously published, peer-reviewed papers were utilized in the development of the BBWA as can be seen in the BBWA’s 66 pages of references³ Further, the

² William M. Riley and Thomas G. Yocom, *Mining the Pebble Deposit: Issues of 404 compliance and unacceptable environmental impacts*, Prepared for the Bristol Bay Native Corporation and Trout Unlimited, Executive Summary (December 2011), available at <http://www.savebristolbay.org/sites/www.savebristolbay.org/files/documents/TU%20Riley%20Yoakum%20mining%20the%20deposit%20report.pdf> and attached as Enclosure 2.

³ See EPA, *An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska, Second External Review Draft* at Ch. 15.

BBWA is based on real mining scenarios and data to conduct its ecological assessment. These scenarios are drawn directly from the report on the Pebble deposit prepared by an independent third party, Wardrop, for Northern Dynasty Minerals. Northern Dynasty describes the mining scenarios in the report as “economically viable, technically feasible, and permissible.”⁴ This legal document, filed with the Securities and Exchange Commission in 2011, is precisely the detailed mining plan on which the EPA based its evaluation.

In developing the BBWA, EPA also relied on Pebble Limited Partnership permits filed with the State of Alaska in 2006, which provide hundreds of pages of information, data, maps, and descriptions of the Pebble mine. These applications specify the location of the Pebble deposit and the overall mine plans and infrastructure including the location of the proposed open pit, two proposed tailings storage facilities, water treatment facility, drainage ditches, transportation and road corridor, deep water port, and water transmission routes.⁵

Finally, as the EPA makes clear in its Watershed Assessment, even “final” plans developed under NEPA are subject to change between assessments and actual development: “Even an Environmental Assessment of a proposed plan by a mining company would be an assessment of a scenario that undoubtedly would differ from the ultimate development.”⁶

Although Pebble Limited Partnership (PLP) attempts to reject EPA’s BBWA mining scenarios as a “fantasy,”⁷ EPA has clearly based its scenarios on reliable data and plans from PLP’s own parent company. Indeed, PLP’s attempt to obfuscate this fact has led Senator Maria Cantwell to request that the Securities and Exchange Commission investigate whether Northern Dynasty Minerals is misleading investors, stating “Northern Dynasty is either misleading its investors or the EPA and the company must be held accountable for its inconsistencies.”⁸

It has always been EPA standard practice, fortunately for taxpayers, for project proponents to collect their own baseline data, as PLP has done here. EPA took this information into account in the BBWA, and other experts have reviewed and commented on it. What works for the investment community works for risk assessment as well.

⁴ Northern Dynasty Minerals, Inc., *Pebble Project – Preliminary Assessment Technical Report*, page 4 (February 17, 2011), available at http://www.northerndynastyminerals.com/i/pdf/ndm/Pebble_Project_Preliminary%20Assessment%20Technical%20Report_February%2017%202011.pdf.

⁵ Northern Dynasty Minerals, Inc., *Application for Water Rights South Fork Kaktuli River*, LAS 25871 (July 7, 2006), available at <http://dnr.alaska.gov/mlw/mining/largemine/pebble/water-rightapps/index.cfm>.

⁶ Environmental Protection Agency, *Bristol Bay Assessment Executive Summary*, ES27 (April 2013), available at http://www.epa.gov/ncea/pdfs/bristolbay/bristol_bay_assessment_erd2_2013_vol1_exec_summary.pdf.

⁷ See e.g., http://www.ktuu.com/news/ktuu-public-gets-one-more-chance-to-weigh-in-on-pebble-before-scientists-do-20120807_07102116_story.

⁸ Letter from Senator Maria Cantwell, to Elisse B. Walter, Chairman, U.S. Securities and Exchange Commission (March 18, 2013), attached as Enclosure3.

C. SOUND SCIENTIFIC CONCLUSIONS

The collection and review of extensive data, including research papers and previously published peer reviewed articles, supports the findings of the BBWA. EPA, sought to identify and assess the following in the Bristol Bay Watershed, especially in the Kvichak and Nushagak watersheds:

The health of salmon and ecological resources

EPA characterized the current health and conditions of Bristol Bay salmon populations and salmon habitat in the Kvichak and Nushagak watersheds. They also described the general conditions of ecological resources in Bristol Bay, including 35 fish species, 190 bird species, and more than 40 terrestrial animal species. Among other things, EPA found the following:

- The average annual run of sockeye salmon is about 37.5 million fish – 46% of the global sockeye, half of which come directly from the Kvichak and Nushagak drainages.
- Headwater streams in the Pebble deposit area provide a temperature-moderating effect, providing temperatures beneficial to fishes in summer and winter as well.
- Bristol Bay's wild salmon fishery and other natural resources provide at least 14,000 full and part-time jobs and are valued at about \$480 million annually.⁹
- The Bristol Bay commercial salmon fishery generates the largest component of economic activity: it was valued at approximately \$300 million in 2009 (sales from fishers to processors), and provided employment for over 11,000 full and part-time workers at the season's peak.
- The Bristol Bay sport-fishing industry supports approximately 29,000 sport-fishing trips, generates approximately \$60 million per year, and directly employs over 800 full-and part-time workers.
- The scenic value of the watershed, measured in terms of wildlife viewing and tourism, is estimated to generate an additional \$100 million per year and support nearly 1,700 full and part-time workers.
- The subsistence harvest of fish also contributes to the region's cash economy (estimated to be over \$6 million per year) when Alaskan households spend money on subsistence-related supplies.

Potential impacts of mining

EPA evaluated the potential impacts of large-scale porphyry copper, gold and molybdenum mining in the Bristol Bay Watershed using publicly-available mining plans for Bristol Bay and existing information on mining, as well as plausible mining scenarios. EPA also reviewed mining practices that could minimize risks to the Bristol Bay Watershed, and assessed the success and failure rates of those mitigation practices. Among other things, EPA found the following:

⁹ EPA's finding in this regard appears quite conservative, as a recent study found this value to be \$1.5 billion. See Institute of Social and Economic Research at the University of Alaska, *The Economic Importance of the Bristol Bay Salmon Industry* (May 13, 2013), attached as Enclosure 4

- The Pebble deposit, because of its low-grade ore, must be mined in large quantities to be economically viable and if developed, it would be one of the largest mines of its type in North America.
- Based on the scenarios assessed and based on Pebble Partnership filings, the Pebble deposit could yield up to 80.6 billion pounds of copper, 107.4 million ounces of gold and 5.6 billion pounds of molybdenum.
- EPA assessed a road corridor of 86 miles, with an additional 17 km of roads within the direct mine footprint, these roads would cross 53 streams known to support migrating and resident salmonids.
- Mining of the Pebble deposit under EPA's three mining scenarios could cause the direct loss of up to 24, 56, and 90 miles of streams respectively.
- Mining of the Pebble deposit could alter stream flow up to an additional 34 miles of streams.
- Mining of the Pebble deposit would cause the loss of up to 4800 acres of wetlands.
- Mining of the Pebble deposit would produce acidic and metals-laden waters. Based on the nature of these materials, it is extremely unlikely that the mine could operate without degrading water quality downstream, particularly given the perpetual management required.
- Leaching of copper during standard operation could directly impact salmonids up to 35 miles of river and stream beyond the mine footprint.
- Leaching during standard operation could indirectly impact salmonids in up to 51 miles of stream within the mine footprint.
- There are no examples of successful, long-term collection and treatment systems for mines, because these time periods exceed the lifespan of most past large-scale mining activities, as well as most human institutions. Engineered waste storage systems of mines have only been in existence for about 50 years.
- In event of a tailings dam failure, the North Fork Kaktuli River could lose up to 19 miles of stream habitat and would not support salmon for at least 10 years and spawning and rearing habitat would be impacted for a period of decades.
- A tailings dam failure could cause a loss of up to 30% of the Nushagak king salmon and 10-20% of the Mulchatna king salmon.

Role of salmon in indigenous populations and economy

EPA described the role of salmon in Alaska Native cultures present in the Nushagak and Kvichak watersheds. Among other things, EPA found:

- The Yup'ik and Dena'ina are two of the last intact, sustainable, salmon-based cultures in the world. There are 31 Alaska Native Villages in Bristol Bay, and many residents of Native villages depend on a salmon subsistence-based economy.
- Bristol Bay is home to 25 federally recognized tribal governments, 14 of which are in the Nushagak and Kvichak drainages with a population of 4,337 in 2010.
- Salmon are integral to the entire way of life in these cultures as subsistence food and subsistence-based livelihoods, and are an important foundation for language, spirituality and social structure.
- The subsistence-based way of life is a key element of Alaska Native identity and serves a wide range of economic, social, and cultural function in Yup'ik and Dena'ina societies.

- In the Bristol Bay region, salmon constitute approximately 52% of the subsistence harvest, and for some communities the proportion is substantially higher.

In addition, EPA examined the economic state of the greater Bristol Bay fisheries industry and the dependence of non-Native populations on the salmon resource.

III. EPA HAS CONDUCTED RIGOROUS PUBLIC AND PEER REVIEW OF THE BRISTOL BAY WATERSHED ASSESSMENT

A. EPA PUT TOGETHER AN EXPERIENCED AND HIGHLY QUALIFIED TEAM TO DRAFT AND REVIEW THE BRISTOL BAY WATERSHED ASSESSMENT

The BBWA was written, compiled and reviewed by a well-qualified team of scientists, researchers and independent consultants. The scientists, academics, and professionals who contributed to its production possess the necessary experience and credentials for the project:

- The authors include sixteen professionals in appropriate fields that span the breadth of the assessment topics, including, among other areas of expertise,
 - plant ecology,
 - stream fish ecology and habitat,
 - aquatic ecology,
 - wetlands and watersheds,
 - hydrology,
 - ecosystem modeling,
 - environmental assessment,
 - ecological risk assessment,
 - waste and chemical management ,
 - geotechnical and geoenvironmental engineering,
 - geology, and
 - civil engineering/environmental restoration.
- These authors were assisted by an additional thirty-nine experts in additional fields including, but not limited to,
 - anthropology,
 - economics,
 - bioeconomics,
 - habitat conservation,
 - environmental engineering and chemistry,
 - forest ecology,
 - mineral resources,
 - toxicology, and
 - GIS.

Moreover, the BBWA was reviewed by EPA and other professionals who possess scientific and professional expertise in other disciplines covered by the assessment.

In my experience and opinion, EPA organized a team of highly-qualified professionals who have backgrounds and expertise in all of the fields critical to conducting the watershed assessment to high standards of integrity.

B. EPA HAS PROVIDED AMPLE OPPORTUNITY FOR INTERAGENCY CONSULTATION AND PUBLIC PARTICIPATION

Pre-Watershed Assessment Public Process

Once EPA decided to prepare the BBWA, it proceeded using a well-structured and methodical manner. That process is summarized here. In February 2011, EPA issued an “Outline for the Development of EPA’s Bristol Bay Watershed Assessment,” in which it described a “process for EPA, in coordination with Federal, State and Tribal organizations to collect and evaluate information necessary to determine whether to initiate an advanced 404(c) action, or take other appropriate action”¹⁰ EPA described a series of specific tasks that it planned to complete in preparing the Assessment, including reviewing and documenting relevant scientific literature and interviewing agency staff and other experts with respect to the characterization of the salmon fishery, risks associated with large-scale development, and potential mitigation measures, as well as synthesizing the “cumulative impacts of all risks, threats and stressors identified on the long term ecological integrity of the Bristol Bay salmon resource and factor in the perpetual efficacy of any mitigation measures identified.”¹¹ EPA also noted that it would formally “consult with Tribes in the watershed that request consultation and [would] meet with prospective resource developers within the watershed, relevant federal and Alaska state agencies and other interests as requested and appropriate.”¹²

As described above, EPA put together a strong project team to work on the BBWA. EPA personnel made trips to the Bristol Bay region “to see firsthand what is being studied and talk with those affected.”¹³ Prior to drafting the assessment EPA engaged in government-to-government consultation with Tribes, working with an intergovernmental technical team (IGTT) with representatives from federal and state agencies and tribal governments. EPA conducted extensive public outreach, including holding community meetings in Ekwok, Iliamna, Nondalton, Newhalen, Koliganek, Kokhanok, New Stuyahok, Dillingham, and Anchorage. It reviewed hundreds of letters and petitions and tens of thousands of emails, maintained a website and listserv; conducted a traditional ecological study involving dozens of interviews in several Bristol Bay villages, and interviewed village elders regarding the importance of salmon in people’s lives.¹⁴

Public Process for First Draft of Bristol Bay Watershed Assessment

In May 2012, after approximately 16 months of preparation, EPA released its Draft BBWA. It then opened a 60-day public comment period on this draft. During this period, EPA conducted

¹⁰ EPA Region 10, *Outline for the Development of EPA’s Bristol Bay Watershed Assessment* (Feb. 7, 2011), available at http://www.epa.gov/region10/pdf/bristolbay/outline_bristol_bay_watershed_assessment.pdf (last visited July 29, 2013).

¹¹ *Id.*

¹² *Id.*

¹³ EPA, Powerpoint presentation *Bristol Bay Watershed Assessment* (Dec. 2011), available at www.epa.gov/region10/pdf/bristolbay/epa_bristol_bay_update_120511.pdf (last visited July 29, 2013).

¹⁴ *Id.*

webinars on the Draft Assessment,¹⁵ and completed a series of public hearings in Seattle, Anchorage, and the Bristol Bay villages of Dillingham, Naknek, Levelock, Igiugig, Nondalton, and New Stuyahok.¹⁶

At the hearings, the overwhelming majority of commenters supported the Assessment process. Altogether, 80% of those who spoke at public hearings on the draft watershed assessment (and over 93% of those who spoke at the in- region hearings) supported EPA's work.

In addition to input provided at these hearings, EPA received over 220,000 public comment letters on the draft Assessment. Indeed, more than 95% of all public input expressed support for the BBWA and/or EPA action.¹⁷ Most importantly, in the Bristol Bay region, more than 92% of all written comments and public testimony supported EPA action.¹⁸ Examples of public comments include:

- “[W]e have a right to be afraid of what is happening, because we live in this land . . . We have been in this battle long enough. We want to see something start happening that can assure Alaska native people in this area that our waters, our way of life will continue to be protected.”¹⁹
- “[F]rom an investor perspective, a Section 404(c) process at this stage could help remove regulatory risk and uncertainty about large-scale mining in the region. This presents the opportunity to enhance clarity which could in turn facilitate the efficient allocation of capital investment in mineral development. We believe it is prudent for all financially interested parties to understand now, as fully as possible, the regulatory environment.”²⁰

Public Process for Second Draft of Bristol Bay Watershed Assessment

On April 30, 2013 EPA released its revised draft of the BBWA for public review and comment.²¹ EPA allowed for a 60-day comment period, receiving more than 877,000 public comment letters and petition signatures.²² While it is not yet possible to review the entire docket on EPA's

¹⁵ EPA Region 10, News Release, *EPA Releases for Public Comment Draft Scientific Study of Bristol Bay Watershed* (May 18, 2012), available at <http://yosemite.epa.gov/opa/admpress.nsf/d96f984dfb3ff7718525735900400c29/6979fe30fc6583f385257a020061b472!OpenDocument> (last visited July 29, 2013); Judy Smith, Community Involvement Coordinator, EPA Region 10 (email to Bristol Bay listserv), *Webinar: Draft Bristol Bay Watershed Assessment Overview* (July 10, 2012).

¹⁶ EPA, *Bristol Bay—Current Public Involvement*, <http://www2.epa.gov/bristolbay/current-public-involvement> (last visited July 29, 2013).

¹⁷ See Overwhelming Public Support for EPA Action to Protect Bristol Bay Fact Sheet, attached as Enclosure 5.

¹⁸ *Id.*

¹⁹ Record of Public Comment Meeting, New Stuyahok Alaska at 15, Joe Chythlook, available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2012-0276-4154>.

²⁰ Jonas Kron, Vice President of Trillium Asset Management, LLC and Stuart Dalheim, Vice President of Calvert Investment Management, Inc., available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2012-0276-5782>.

²¹ EPA, *Revised Draft Assessment is Available for Review* (April 2013), <http://www2.epa.gov/bristolbay/bristol-bay-assessment-fact-sheet-april-2013>.

²² See Regulations.gov Docket Folder Summary for Revised External Review Draft of BBWA, <http://www.regulations.gov/#!docketDetail:D=EPA-HQ-ORD-2013-0189> (last visited July 29, 2013) (showing 877,990 comments received as of 11:59PM on July 29 2013).

publicly accessible web portal, currently more than 95% (or 841,411 comments of the total comments received) are available for review. Of those publicly available comments, more than 76% supported EPA's BBWA process and/or requested EPA take action under 404(c).²³ Importantly, more than 94% of those commenting from the Bristol Bay region supported EPA's watershed assessment and/or 404(c) action.²⁴ In addition to the overwhelming support for EPA coming from the Bristol Bay region, this public comment process saw comments supportive of EPA's actions and the BBWA process from more than 150 Alaska small business owners,²⁵ three Alaska state representatives²⁶, and thirteen members of US Congress.²⁷

C. EPA IS CONDUCTING A RIGOROUS PEER REVIEW OF THE BRISTOL BAY WATERSHED ASSESSMENT

The U.S. Office of Management and Budget (OMB) promulgated guidelines for peer review of scientific information developed by federal agencies.²⁸ These guidelines have distinct peer review requirements for "influential scientific information" (ISI)²⁹ and for "highly influential scientific assessments" (HISAs),³⁰ which are considered a subset of ISI and are subject to "stricter minimum requirements" for peer review.³¹ EPA's peer review of the BBWA complies

²³ Overwhelming Public Support for EPA Action to Protect Bristol Bay, Second Comment Period Fact Sheet, attached as Enclosure 6 (July 29, 2013).

²⁴ *Id.*

²⁵ See Letter from Scott Hed, Director, Sportsman's Alliance for Alaska et al., to Acting EPA Administrator Perciasepe (June 12, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-5063> (signed by 134 Alaska small business owners and presidents); Letter from Tony Behm and Scott Struznik, Alagnak Lodge et al. to EPA (June 27, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-5319> (signed by 44 Alaska small business owners and presidents).

²⁶ See Letter from Representative Bryce Edgmon (May 30, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-5058>; Letter from Representative Andy Josephson (June 27, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-5320>; and Letter from Representative Les Gara (June 26, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-5618>.

²⁷ See Letter from Rep. John F. Tiemey et al., to Acting EPA Administrator Perciasepe (May 28, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-7353> (signed by 4 members of Congress) and Letter from Rep. Earl Blutnauer et al. (June 11, 2013), available at <http://www.regulations.gov/#!documentDetail:D=EPA-HQ-ORD-2013-0189-7355> (signed by 9 members of Congress).

²⁸ See OMB, *Final Information Quality Bulletin for Peer Review*, 70 FED. REG. 2664 (Jan. 14, 2005) (hereafter "Bulletin"), available at <http://www.ssa.gov/515/PeerReviewsFedRegNoticeForFinalBulletin.pdf> (last visited July 10, 2013).

²⁹ The term "influential scientific information" means "scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions." *Id.* at 2667, 2675.

³⁰ A scientific assessment is considered "highly influential" where "the agency or the OIRA Administrator determines that the dissemination could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest," *id.* at 2671. See *id.* at 2675. OIRA refers to the Office of Information and Regulatory Affairs within OMB. See *id.* at 2674.

³¹ See *id.* "Even for these highly influential scientific assessments," however, "the Bulletin leaves significant discretion to the agency formulating the peer review plan." *Id.*

with the more rigorous HISA guidelines.³² Among other things, the peer review process has included the following actions:

- To ensure the transparency of its efforts, EPA posted the Peer Review Agenda and Plan for the Draft Assessment on its public website,
- EPA's Plan includes a summary of the subject and purpose of the report, designation of the report as HISA, timing of the review, manner in which the review will be conducted, opportunities for public comment, the number of reviewers and a description of their required expertise, and how reviewers will be nominated and selected.
- EPA invited nominations from the public between February 24 and March 16, 2012.
- In its selection criteria for peer reviewers, EPA required the "absence of financial conflicts of interest," and "no actual conflicts of interest or the appearance of [impropriety]."
- The Draft Assessment peer review panel includes members with strong expertise in each of the subject areas relevant for evaluating the Draft Assessment.
- EPA provided a public comment period on the adequacy of the Draft Assessment Peer Review Plan from April 9, 2012 through May 10, 2012
- EPA provided the peer review panel with the Draft Assessment, which consists of 1,180 pages published in three volumes. The first volume sets forth the main text (338 pages), and the two remaining volumes provide an additional 842 pages of materials compiled into nine appendices that show the reviewers the information upon which the Draft Assessment is based.

The results of the peer review include the following comments:

- *This Assessment presents a "comprehensive overview of current conditions and establishes the global uniqueness of the area to salmon ecology." (Atkins)*
- *"The Assessment presents a well documented discussion of the fish and wildlife resources of the Nushagak and Kvichak River Watersheds, with more limited discussions on the remainder of the Bristol Bay watershed." (Webber Scannell)*
- *"My point is that probable environmental consequences of mining activities are much greater than this report alludes to, given that consequences are likely, even if their magnitude is uncertain." (Dauble)*
- *"Make no mistake we cannot have both mining and productive salmon stocks in the Bristol Bay watershed. . . As a result of the mining operation, the government will be saddled with a 1000 years (at minimum) of monitoring and maintenance of this closed site." (Stein)*

In response to input from the peer review, EPA further strengthened the assessment by providing more information in areas related to climate change, mitigation, more diverse mining scenarios, induced/cumulative impacts and a more thorough treatment of the region's complex hydrology thus deepening the understanding of the potential impacts associated with hard rock mining in Bristol Bay. Further, as of the release of the Second Draft of the Watershed Assessment, over

³² See EPA, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska— Peer Review Panel Members and Charge Questions, 77 FED. REG. 33213, 33214 (June 5, 2012).

300 internationally recognized scientists have signed a collective letter validating the work of the EPA, and expressing deep concerns about the prospects of large-scale mining in the Bristol Bay Watershed.³³

After release of the second draft of the Watershed Assessment, EPA again hired a team of reviewers to ensure quality, accuracy, and evaluate if EPA sufficiently responded to concerns from the first round review. It is my understanding that before finalizing the Assessment, EPA will consider the final peer review report and that this report will be made available to the public. Therefore by the time this assessment is final, the second peer review will add to the significant existing credibility of the BBWA.

IV. EPA AUTHORITY UNDER THE CLEAN WATER ACT

A. EPA HAS THE AUTHORITY TO CONDUCT THE BRISTOL BAY WATERSHED ASSESSMENT UNDER SECTIONS 104 AND 404 OF THE CLEAN WATER ACT

As described below, the Environmental Protection Agency (“EPA”) is authorized to conduct watershed assessments as it deems appropriate in order to achieve the goals of the Clean Water Act (“CWA”) and in order to properly oversee the 404 permitting program. The CWA directs EPA to “establish national programs for the prevention, reduction and elimination of pollution”³⁴ and to “prescribe such regulations as are necessary to carry out [its] functions under [the CWA].”³⁵

As a means of fulfilling its role in the 404 process and its statutory responsibilities, Congress has granted EPA broad discretionary authority in Section 104 of the CWA to conduct research and gather information, including the authority to “conduct and promote the coordination and acceleration of, research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of pollution” and to “collect and make available through publications and other appropriate means, the results of and other information, including appropriate recommendations by [the EPA Administrator] in connection therewith, pertaining to such research and other activities”³⁶

Additionally, EPA’s authority to conduct a watershed assessment in Bristol Bay is implied in its authority to prohibit or restrict 404 permitting in defined areas under Section 404(c) of the CWA.³⁷ In order to make the “unacceptable adverse effects” determination required by 404(c), EPA must in some manner collect information about the affected resources and the impacts that discharges of dredged or fill material would have on these resources.

Under EPA regulations setting out its 404(c) procedures, “the Administrator will take into account all information available to [her]”³⁸ The Assessment allows EPA to gather into one

³³ See Letter from Dominick A. DellaSala, Ph.D. et, al, to President Barak Obama (April 26, 2013), attached as Enclosure 7.

³⁴ 33 U.S.C. § 1254(a).

³⁵ 33 U.S.C. § 1361(a).

³⁶ 33 U.S.C. § 1254(a)(1) and (b)(1).

³⁷ 33 U.S.C. § 1344(c).

³⁸ 40 C.F.R. § 231.1(a).

place all the available information on the Bristol Bay resources and the risks posed by large-scale mining to those resources, to assist EPA in complying with its regulations if and when the agency makes a proposed determination under 404(c). Moreover, if the Administrator chooses to exercise her 404(c) authority, she must “set forth in writing and make public [her] findings and [her] reasons for making any determination.”³⁹ Thus, EPA has clear authority to collect the information necessary to inform potential decisions under Section 404(c) of the CWA through an assessment of the Bristol Bay watershed.

Also within the 404(c) context, EPA’s scientific watershed assessment process is guided by its existing regulations and prior experience. EPA’s 404(c) regulations explain that “[i]n evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 CFR part 230).”⁴⁰ Among other things, the 404(b)(1) Guidelines advise EPA to “[e]valuate the various physical and chemical components which characterize the non-living environment of the candidate site, the substrate and the water including its dynamic characteristics;” and “[e]valuate the material to be discharged to determine the possibility of chemical contamination or physical incompatibility of the material to be discharged.”⁴¹ EPA’s commitment to and preparation of the BBWA is consistent with these Guidelines.

Finally, in Bristol Bay the public includes Alaska Native tribes which have inhabited the region for millennia.⁴² EPA’s proposed Policy on Consultation and Coordination with Indian Tribes states that EPA should “consult on a government-to-government basis with tribal governments when EPA actions and decisions may affect tribal interests” and ensure “the close involvement of tribal governments and give special consideration to their interests whenever EPA’s actions may affect Indian country or other tribal interests.”⁴³ EPA’s Watershed Assessment provides an important mechanism to help EPA fulfill its trust obligation to Alaska Native tribes with respect to the water resources and salmon fisheries in Bristol Bay.

B. EPA HAS THE AUTHORITY TO TAKE ACTION UNDER SECTION 404(C) OF THE CLEAN WATER ACT

The goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters so that they can support “the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.”⁴⁴ To further this goal, the CWA regulates, among other things, discharges of pollution – including dredged or fill material -- into waters of

³⁹ 33 U.S.C. § 1344(c).

⁴⁰ 40 C.F.R. §231.2(e).

⁴¹ 40 C.F.R. § 230.5(e), (f), (h).

⁴² Six federally recognized tribes in the Kvichak and Nushagak River drainages have urged EPA to use 404(c) proactively to protect water and fishery resources in Bristol Bay—Nondalton Tribal Council, Koliganik Village Council, New Stuyahok Traditional Council, Ekwok Village Council, Curyung Tribal Council and Levelock Village Council.

⁴³ EPA, *Proposed Policy on Consultation and Coordination with Indian Tribes*, at 3, 6 (June 9, 2010), *available at* <https://www.google.com/search?source=ig&hl=en&rlz=&=&q=EPA%E2%80%99s+Proposed+Policy+for+Relations+with+Indian+Tribes>.

⁴⁴ 33 U.S.C. § 1251(a)(2).

the United States.⁴⁵ EPA maintains oversight over this “section 404” permitting program as set out in Section 404(c).

Through Section 404(c) Congress authorized EPA to prohibit or withdraw the specification, or deny, restrict, or withdraw the use for specification, of any defined area as a disposal site for dredged or fill material whenever the EPA Administrator “determines that the discharge of dredged or fill material is having or will have an ‘unacceptable adverse effect’ on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.”⁴⁶ In determining what constitutes an “unacceptable adverse effect,” EPA considers relevant portions of the 404 Guidelines (40 CFR 230).⁴⁷ The Guidelines assist in determining if discharges of dredged or fill material can be permitted, and would, in part, determine whether discharges from a proposal to mine the Pebble deposit could be authorized by the Department of the Army pursuant to Section 404 of the CWA.

As noted above, Congress in the text of the Clean Water Act provided EPA authority to act under Section 404(c) if a proposed project “will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.”⁴⁸ The use of the future tense with the phrase “will have” indicates that EPA may exercise its 404(c) authority before an area is specified as a disposal site within a 404 permit.

The Act’s legislative history also supports this proactive use of 404(c) authority. At the time Congress was developing the Clean Water Act Amendments of 1972, Senator Edmund Muskie emphasized the forward-looking nature of EPA’s 404(c) authority by stating that “... prior to the issuance of any permit to dispose of spoil, the Administrator [of EPA] must determine that the material to be disposed of will not adversely affect municipal water supplies, shellfish beds and fishery areas..., wildlife, or recreational areas in the specified site. Should the Administrator so determine, no permit may issue.”⁴⁹

Further, EPA’s regulations implementing 404(c) expressly address the agency’s authority to take action with respect to future disposal sites, either before a permit application has been submitted or during the permitting process. The following are a few examples:

Under section 404(c), the Administrator may exercise a veto over the specification by the U.S. Army Corps of Engineers or by a state of a site for the discharge of dredged or fill material. The Administrator may also prohibit the specification of a site under section 404(c) with regard to any existing or potential disposal site before a permit application has been submitted to or approved by the Corps or a state. ...⁵⁰

⁴⁵ Waters of the United States are defined in federal regulations at 40 CFR 230.3(s)(1)-(7), and include tidal waters, tributary rivers and streams, adjacent wetlands, and “other waters.”

⁴⁶ 33 U.S.C. § 1344(c).

⁴⁷ See 40 CFR 231.2(e) (definitions).

⁴⁸ CWA § 404(c), 33 U.S.C. § 1344(c) (emphasis added).

⁴⁹ Sen. Edmund Muskie, *Senate Consideration of the Report of the Conference Committee*, s. 2770, 93rd Cong. 1st Sess. (Oct. 4, 1972), *reprinted in* 1 LEGIS. HISTORY OF WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972, at 177 (1973).

⁵⁰ 40 C.F.R. § 231.1(a) (emphasis added).

The regulations set forth in this part are applicable whenever the Administrator is considering whether the specification of any defined area as a disposal site should be prohibited, denied, restricted, or withdrawn. These regulations apply to all existing, proposed or potential disposal sites for discharges of dredged or fill material into waters of the United States, as defined in 40 CFR 230.2. ...⁵¹

... [T]he term: ... (b) *Prohibit specification* means to prevent the designation of an area as a present or future disposal site. (c) *Deny or restrict the use of any defined area for specification* is to deny or restrict the use of any area for the present or future discharge of any dredged or fill material.⁵²

Similarly, in the 1979 preamble to its regulations implementing 404(c), EPA explained that “the statute clearly allows it to use 404(c) before an application is filed” and that “... [S]ection 404(c) authority may be exercised before a permit is applied for, while an application is pending, or after a permit has been issued. In each case, the Administrator may prevent any defined area in waters of the United States from being specified as a disposal site, or may simply prevent the discharge of any specific dredge or fill material into a specified area.”⁵³ Furthermore, in the Memorandum of Agreement between EPA and the U.S. Army Corps of Engineers delineating their shared responsibility under Section 404(q) of the Clean Water Act, the portion “address[ing] EPA’s exercise of its 404(c) veto authority expressly contemplates that the agency would act before the Corps issues a permit.”⁵⁴

Early action to establish restrictions on unsuitable disposal sites facilitates planning by developers and industry and eliminates frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage he or she must start over. As EPA explained in its preamble explanation of its regulations such a proactive approach “will facilitate planning by developers and industry ... eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over [and] facilitate comprehensive rather than piecemeal protection of wetlands.”⁵⁵ Proactive use of 404(c) therefore stems from a concern for the plight of the applicant as well as a desire to protect the site before any adverse impacts occur.⁵⁶

V. CONCLUSION – EPA SHOULD ACT TO PROTECT BRISTOL BAY

Over the course of my career I have reviewed and been involved in many important decisions requiring the balancing of values allowing America to thrive economically, maintain and

⁵¹ *Id.* § 231.1(c) (emphasis added).

⁵² *Id.* § 231.2(b)-(c) (emphasis added).

⁵³ EPA, Denial or Restriction of Disposal Sites: Section 404(c) Procedures, 44 FED. REG. 58076, 58076-77 (Oct. 9, 1979) (emphasis added).

⁵⁴ Clean Water Act Section 404(q): Memorandum of Agreement Between the EPA and Dept. of Army, *available at* <http://water.epa.gov/lawsregs/guidance/wetlands/dispmoa.cfm>.

⁵⁵ 44 Fed. Reg. 58076, 58077 (Oct. 9, 1979).

⁵⁶ *Id.* (emphasis added).

enhance a high quality of life, and respect the views of citizens most likely to be impacted by proposed development, including those of indigenous populations. In my opinion, EPA can feel confident that any action it takes to protect Bristol Bay would be well-founded and based on EPA's utilization of best practices, sound science and judgment in preparing its BBWA. And in my experience, no better case can be made that EPA should take proactive action to protect Bristol Bay salmon, which in turn protects the people of the region and its bedrock sustainable economy. It is clear that the Bristol Bay watershed is truly unique, of national significance, and at great risk from mining of the Pebble deposit.

As authorized by Section 404(c), EPA action can take many forms, from an outright prohibition on permits to the placement of restrictions on future permits to ensure that Bristol Bay is protected. In my view, a reasonable path forward would be for EPA to use proactive restrictions in the form of performance standards to protect Bristol Bay from the proposed Pebble mine. In my time at EPA I worked with some of the nation's primary experts on hard rock mines and the implementation of Section 404 of the Clean Water Act. After retiring from the EPA, two of these experts – William Riley and Thomas Yocom – analyzed available information about the proposed Pebble mine and prepared a report that recommends that EPA establish three standards that are founded in EPA and Corps policy and practice:

- no discharge of fill material to wild salmon spawning and rearing habitat,
- no discharge of toxic material to waters of the U.S., and
- no discharge of fill material that will require treatment of seepage and runoff in perpetuity.

Utilizing standards such as these, EPA can provide clarity and specificity in advance of any permit application. Issuing a 404(c) ruling will provide the Alaska Natives, commercial and sports fishing industries, and others who rely on Bristol Bay the certainty they all deserve. Further, it will provide companies with very clear parameters under which they could operate. Such action would be cost-effective, provide certainty to permit applicants as to what minimal requirements they would need to meet in order to qualify for a 404 permit, and provide reassurance to all other stakeholders with regard to future development and its impact on their lives and businesses.

As Senator Lisa Murkowski recently stated, the proposed Pebble mine has promoted “anxiety, frustration, and confusion” in many Alaska communities. EPA has the science foundation and legal authority to protect Bristol Bay from this proposed mine, and in my opinion, should do so right away.